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| APPLICATION NO. | FILING DATE | FIRST NAMED INVENTOR | ATTORNEY DOCKET NO. | CONFIRMATION NO. |
|---|-------------|----------------------|---------------------|------------------|
| 10/675,664 | 09/30/2003 | Torsten Niederdrank | P03,0382 | 5809 |
| 26574 | 7590 | 01/25/2006 | EXAMINER | |
| SCHIFF HARDIN, LLP PATENT DEPARTMENT 6600 SEARS TOWER CHICAGO, IL 60606-6473 | | | | ENSEY, BRIAN |
| | | | | ART UNIT 2646 |
| | | | | PAPER NUMBER |

DATE MAILED: 01/25/2006

Please find below and/or attached an Office communication concerning this application or proceeding.

| | | | |
|------------------------------|------------------------|----------------------|--|
| Office Action Summary | Application No. | Applicant(s) | |
| | 10/675,664 | NIEDERDRANK, TORSTEN | |
| | Examiner | Art Unit | |
| | Brian Ensey | 2646 | |

-- The MAILING DATE of this communication appears on the cover sheet with the correspondence address --

Period for Reply

A SHORTENED STATUTORY PERIOD FOR REPLY IS SET TO EXPIRE 3 MONTH(S) OR THIRTY (30) DAYS, WHICHEVER IS LONGER, FROM THE MAILING DATE OF THIS COMMUNICATION.

- Extensions of time may be available under the provisions of 37 CFR 1.136(a). In no event, however, may a reply be timely filed after SIX (6) MONTHS from the mailing date of this communication.
- If NO period for reply is specified above, the maximum statutory period will apply and will expire SIX (6) MONTHS from the mailing date of this communication.
- Failure to reply within the set or extended period for reply will, by statute, cause the application to become ABANDONED (35 U.S.C. § 133). Any reply received by the Office later than three months after the mailing date of this communication, even if timely filed, may reduce any earned patent term adjustment. See 37 CFR 1.704(b).

Status

1) Responsive to communication(s) filed on 14 November 2005.

2a) This action is FINAL. 2b) This action is non-final.

3) Since this application is in condition for allowance except for formal matters, prosecution as to the merits is closed in accordance with the practice under *Ex parte Quayle*, 1935 C.D. 11, 453 O.G. 213.

Disposition of Claims

4) Claim(s) 1-17 is/are pending in the application.

4a) Of the above claim(s) _____ is/are withdrawn from consideration.

5) Claim(s) _____ is/are allowed.

6) Claim(s) 1-11 and 16 is/are rejected.

7) Claim(s) 12-15 and 17 is/are objected to.

8) Claim(s) _____ are subject to restriction and/or election requirement.

Application Papers

9) The specification is objected to by the Examiner.

10) The drawing(s) filed on _____ is/are: a) accepted or b) objected to by the Examiner.
Applicant may not request that any objection to the drawing(s) be held in abeyance. See 37 CFR 1.85(a).
Replacement drawing sheet(s) including the correction is required if the drawing(s) is objected to. See 37 CFR 1.121(d).

11) The oath or declaration is objected to by the Examiner. Note the attached Office Action or form PTO-152.

Priority under 35 U.S.C. § 119

12) Acknowledgment is made of a claim for foreign priority under 35 U.S.C. § 119(a)-(d) or (f).

a) All b) Some * c) None of:
 1. Certified copies of the priority documents have been received.
 2. Certified copies of the priority documents have been received in Application No. _____.
 3. Copies of the certified copies of the priority documents have been received in this National Stage application from the International Bureau (PCT Rule 17.2(a)).

* See the attached detailed Office action for a list of the certified copies not received.

Attachment(s)

1) Notice of References Cited (PTO-892)
 2) Notice of Draftsperson's Patent Drawing Review (PTO-948)
 3) Information Disclosure Statement(s) (PTO-1449 or PTO/SB/08)
Paper No(s)/Mail Date _____.

4) Interview Summary (PTO-413)
Paper No(s)/Mail Date. _____.
 5) Notice of Informal Patent Application (PTO-152)
 6) Other: _____.

DETAILED ACTION

Claim Rejections - 35 USC § 102

The following is a quotation of the appropriate paragraphs of 35 U.S.C. 102 that form the basis for the rejections under this section made in this Office action:

A person shall be entitled to a patent unless –

(b) the invention was patented or described in a printed publication in this or a foreign country or in public use or on sale in this country, more than one year prior to the date of application for patent in the United States.

1. Claims 1 and 2 are rejected under 35 U.S.C. 102(b) as being anticipated by Sontag U.S. Patent No. 4,654,880.

Regarding claim 1, Sontag discloses a hearing device (a signal transmission device for transmission across a barrier such as the skin in an implanted hearing aid, see col. 4, lines 15-18), comprising: a radio device (12) to transmit signals to a second hearing device (18), the radio device comprising an antenna (14) device to perform at least one of transmitting and receiving, the antenna device comprising a self-exciting oscillation circuit (resonant circuit 14 consisting of capacitor 24 and inductor 22) (See Fig. 1 and col. 1, lines 29-33 and col. 1, line 58 to col. 2, line 26).

Regarding claim 2, Sontag further discloses the antenna device consists exclusively of an LC oscillation circuit (resonant circuit 14 consisting of capacitor 24 and inductor 22) (See Fig. 1 and col. 1, lines 29-33 and col. 1, line 58 to col. 2, line 26).

Claim Rejections - 35 USC § 103

The text of those sections of Title 35, U.S. Code not included in this action can be found in a prior Office action.

2. Claims 3, 6-8, 11 and 16 are rejected under 35 U.S.C. 103(a) as being unpatentable over Sontag in view of Katayanagi et al. U.S. Patent No. 5,732,390.

Regarding claim 3, Sontag discloses a hearing aid as claimed. Sontag does not expressly disclose a receiving device comprising a median filter device configured to reduce noise signals. However, the use of median filters for noise reduction in transmitting and receiving devices is well known in the art and Katayanagi teaches using a median filter in noise reduction (See col. 10, lines 23-43). It would have been obvious to one of ordinary skill in the art at the time of the invention to utilize a median filter to capture a mid value and report an accurate level for noise reduction (See col. 10, lines 23-30).

Regarding claim 6, Sontag discloses a hearing device (a signal transmission device for transmission across a barrier such as the skin in an implanted hearing aid, see col. 4, lines 15-18), comprising: a receiving device (18) configured to receive a plurality of values of at least one radio signal (See Fig. 1 and col. 1, lines 29-33 and col. 1, line 58 to col. 2, line 26). Sontag does not expressly disclose the receiving device comprising a median filter device with which a median value of the plurality of values is determined for noise signal prevention. However, the use of median filters for noise reduction in transmitting and receiving devices is well known in the art and Katayanagi teaches using a median filter in noise reduction (See col. 10, lines 23-43). It would have been obvious to one of ordinary skill in the art at the time of the invention to utilize a median filter to capture a mid value and report an accurate level for noise reduction (See col. 10, lines 23-30).

Regarding claim 7, the combination of Sontag in view of Katayangi further discloses the antenna device comprising a self-exciting oscillation circuit (resonant circuit 14 consisting of capacitor 24 and inductor 22) (See Fig. 1 and col. 1, lines 29-33 and col. 1, line 58 to col. 2, line 26).

Regarding claim 8, the combination of Sontag in view of Katayangi further discloses the antenna device consists exclusively of an LC oscillation circuit (resonant circuit 14 consisting of capacitor 24 and inductor 22) (See Fig. 1 and col. 1, lines 29-33 and col. 1, line 58 to col. 2, line 26).

Regarding claim 11, Sontag does not expressly disclose each of the plurality of values is a measure for a period duration of the self-exciting oscillation circuit. However, Katayanagi teaches each of the plurality of values is a measure for a period duration or frames (See col. 10, lines 23-30). It would have been obvious to one of ordinary skill in the art at the time of the invention to measure the signal of oscillation for a set duration to capture a mid value and report an accurate level for noise reduction (See col. 10, lines 23-30).

Regarding claim 16, Sontag discloses a method for noise signal reduction in hearing device (a signal transmission device for transmission across a barrier such as the skin in an implanted hearing aid, see col. 4, lines 15-18) receiving signals, comprising: a receiving a plurality of values of at least one radio signal via a hearing device (See Fig. 1 and col. 1, lines 29-33 and col. 1, line 58 to col. 2, line 26). Sontag does not expressly disclose the receiving method comprising a median filtering of the plurality of values to produce a median value for noise signal reduction. However, the use of median filters for noise reduction in transmitting and receiving devices is well known in the art and Katayanagi teaches using a median filter in noise

reduction (See col. 10, lines 23-43). It would have been obvious to one of ordinary skill in the art at the time of the invention to utilize a median filter to capture a mid value and report an accurate level for noise reduction (See col. 10, lines 23-30).

3. Claims 4 and 5 are rejected under 35 U.S.C. 103(a) as being unpatentable over Sontag in view of Anderson U.S. Patent No. 5,721,783.

Regarding claim 4, Sontag discloses a hearing aid as claimed. Sontag further discloses a wireless communication link. Sontag does not expressly disclose a half-duplex transmission line is established with the radio device. However, half duplex communication is merely communication which occurs in one direction at a time and Anderson teaches transmission from one device to the other for processing and then back and the need for size reduction and reduced power consumption. It would have been obvious to one of ordinary skill in the art at the time of the invention that half duplex communication is used for reduced power consumption.

Regarding claim 5, the combination of Sontag in view of Anderson further discloses a signal transmission is implemented in the long-wave range with the radio device (See Anderson col. 4, lines 26-29).

4. Claims 9 and 10 are rejected under 35 U.S.C. 103(a) as being unpatentable over the combination of Sontag in view of Katayanagi as applied to claim 6 above, and further in view of Anderson.

Regarding claim 9, the combination of Sontag in view of Katayangi discloses a hearing aid as claimed. The combination of Sontag in view of Katayangi further discloses a wireless communication link. The combination of Sontag in view of Katayangi does not expressly disclose a half-duplex transmission line is established with the radio device. However, half

duplex communication is merely communication which occurs in one direction at a time and Anderson teaches transmission from one device to the other for processing and then back and the need for size reduction and reduced power consumption. It would have been obvious to one of ordinary skill in the art at the time of the invention that half duplex communication is used for reduced power consumption.

Regarding claim 10, the combination of Sontag in view of Katayangi in view of Anderson further discloses a signal transmission is implemented in the long-wave range with the radio device (See Anderson col. 4, lines 26-29).

Allowable Subject Matter

Claims 12-15 and 17 are objected to as being dependent upon a rejected base claim, but would be allowable if rewritten in independent form including all of the limitations of the base claim and any intervening claims.

Response to Arguments

Applicant's arguments with respect to claims 1-17 have been considered but are moot in view of the new ground(s) of rejection.

Additionally, the examiner disagrees regarding the applicants argument that one of ordinary skill in the art would not be directed to the art of telecommunication to solve a problem related to hearing aids. With the incorporation of wireless communication into the hearing aid art, many telecommunication devices consist of attachments or incorporated hearing assist

Art Unit: 2646

accessories. Therefore, it is not only obvious ~~not~~^{but} necessary to consider the telecommunication art when examining wireless devices in the hearing aid art. *40*

Conclusion

Any inquiry concerning this communication or earlier communications from the examiner should be directed to Brian Ensey whose telephone number is 571-272-7496. The examiner can normally be reached on Monday - Friday 6:30 AM - 3:00 PM.

If attempts to reach the examiner by telephone are unsuccessful, the examiner's supervisor, Sinh Tran can be reached on 571-272-7564. The fax phone number for the organization where this application or proceeding is assigned is 571-273-8300.

Any response to this action should be mailed to:

Commissioner of Patents and Trademarks
P.O. Box 1450
Alexandria, Va. 22313-1450

Or faxed to:

(571) 273-8300, for formal communications intended for entry and for informal or draft communications, please label "PROPOSED" or "DRAFT".
Hand-delivered responses should be brought to:

Customer Service Window
Randolph Building
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Arlington, VA 22314

Information regarding the status of an application may be obtained from the Patent Application Information Retrieval (PAIR) system. Status information for published applications may be obtained from either Private PAIR or Public PAIR. Status information for unpublished applications is available through Private PAIR only. For more information about the PAIR system, see <http://pair-direct.uspto.gov>. Should you have questions on access to the Private PAIR system, contact the Electronic Business Center (EBC) at 866-217-9197 (toll-free).

BKE
January 18, 2006



SINH TRAN
SUPERVISORY PATENT EXAMINER